Puget Sound Zooplankton Monitoring Program
Sampler's Launch Pad
Updated on Nov 20, 2024

Pre-sampling prep:

- ☐ Plan your sampling date
  - March – October: twice a month, spaced at least 7 days a part
    - 1st half of the month: 23rd of the previous month – 7th of the current month
    - 2nd half of the month: 8th – 22nd of the current month
  - Nov – Feb: once a month
    - Priority is vertical, obliques are secondary
- ☐ Check your gear for holes or other damage. Make sure flow meters are spinning freely (Equipment maintenance sheet).
  - If you are low on supplies, ask Amanda (awinans@uw.edu)
- ☐ Charge your iPad and sync iForms while still connected to WiFi, print back-up field sheets
  - Issues with iPad or iForms? Contact Emily: Emily.seubert@dfw.wa.gov
- ☐ Make waterproof label if you are using it (PSZMP, Group, date, time, station, type of tow (vertical or bongo), mesh size, depth of tow, and flow meter reading)

During sampling:

- ☐ If using iForm:
    - Open "Plankton Sampling Trip" form, and click the plus at the bottom to create a new trip
    - Select your group name, collector names, field note taker, and check the "Collection Date*" entry matches with the sample date
    - When ready to tow, select "Tows" and fill out all subsequent entries as appropriate
        - NOTE: "Station Location" will grab your exact location and time of sampling and will autofill the lat/long. Hit refresh until the horizontal accuracy is under 10, and check that the lat/long are accurate.
        - Once the location is set, do not re-open this entry, as it will reset the location information. If you think the location is wrong, add the actual coordinates in the comments section.
    - Photo section is intended to be used to document any oddities during the survey, or to take a picture of the sample lid
- ☐ Rig the gear and weights (including attaching the Sensus and depth watch, instructions here)
- ☐ Reset the flow meter to zero
- ☐ For vertical nets, deploy at 30 m/min to 5 m from the bottom, or to max of 200 m
    - Record the line angle
        - If it's not perfectly vertical, increase the line out to achieve the target depth or maneuver the boat to achieve an angle of 0° (Table here)
    - Retrieve immediately at 30 m/min
    - Visually check that the flow meter is spinning as it approaches the surface
    - Record the flow meter reading (instructions here) and wire angle BEFORE spraying down the net (spraying first may introduce additional spins to the flowmeter)
    - If possible, redo the tow if any of the following occur (sample would be considered low quality):
        - Sediment in sample (hitting the bottom)
        - Flow revs outside the acceptable range (Table here)
        - Tow angle >20° (missing flow meter reading) or >30° (with flow meter reading)
- ☐ For oblique/bongo nets, deploy to ~30 m depth, or 5-10 m off bottom in shallower waters, with the boat moving at ~1.5-2 kts
    - Steadily let out line at up to 30 m/min (0.5 m/s) (Line need in Table here)

- Use a protractor (or the measure app on an iPhone) and the wire angle table to determine how much line to put out to reach target depth
- Retrieve immediately at 30 m/min while the vessel is underway, maintaining ~45 ° line angle when possible
- Record the flow meter reading and wire angle
- If possible, redo the tow if any of the following occur (sample would be considered low quality):
  - Flow revs outside the acceptable range (Table here) or abnormal
  - Wire angle is <25° or >70°
  - Depth deviated from the target depth by 15m or more
  - Jagged or stalled tow (≥20% of tow time) (i.e., breaker tripped and net had to be retrieved by hand)

☐ Concentrate the samples with the codend or sieve (200 µm for vertical; 335 µm for oblique)

- Only remove larger specimens if they cannot fit in the sample jar. Make sure you record their removal. (Otherwise, the UW team will remove the large specimens during sample processing)
- Scyphozoans ID guide here if large bell diameter individuals are moved.

☐ Preserve and label the sample with 5% buffered formalin following standard safety protocols (linked here)

- ~45 mL in a 740 mL sample jar, 30 mL in a 500 mL jar, 15 mL in a 250 mL jar
- USE PROPER PPE WHEN HANDLING FORMALIN (Safety Date Sheet here)
  - Make sure you wear nitrile gloves and eye protection
  - If you need PPE, reach out to Emily or Amanda for supplies
- Check sample volume which should be >1/4 of the jar
  - Split into multiple jars (or use a larger jar) if biomass >1/2 jar.
  - To split the sample, mix the sample in a bucket and pour them into different jars.
- Label the jar lid and add barcod
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- e sticker for iForm (See this example)
- Top off the jar with seawater to the bottom of the threads
- Add internal barcode label (if using), ensuring it matches the external label
- Close lid tightly, swirl and mix
- Rinse off outside of jar with water

Post-sampling:

- ☐ Rinse all equipment with freshwater
- ☐ Store equipment carefully
    - Wrapping flowmeters in a towel helps prevent damage to the flowmeter and to the net
- ☐ Upload the iForm when connected to WiFi
    - When iForm is complete and ready to upload, an hourglass symbol will appear next to the entry. If there is a pencil icon, then edits are still necessary prior to upload.
- ☐ If using paper forms, scan and send the pdf to Emily (Emily.seubert@dfw.wa.gov) and Amanda (awinans@uw.edu)
- ☐ Upload Sensus (depth logger) data and send to Emily and Amanda in csv format
- ☐ Schedule sample pick up or drop off with Emily or Amanda
- ☐ Check out the data through King County website; OBIS; or PSZMP website